

Appl. No. 10/038,771
Amdt. dated February 15, 2005
Reply to Office Advisory Action of November 15, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A method of making a preform, comprising:

- providing reinforcing material comprising chopped fibers;
- providing binder material;
- mixing the reinforcing material and the binder material so that the binder material adheres to the reinforcing materials, wherein the step of mixing the reinforcing material and the binder includes emitting a stream of reinforcing material and emitting a stream of binder and mixing the streams;
- applying a stream of the mixture to a solid support surface thereby adhering the mixture to the solid support surface; and
- shaping and solidifying the mixture to form the preform,

Claim 2 (original): The method of claim 1, wherein the step of applying a stream of the mixture to the support surface occurs in the absence of forced air at the support surface.

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Claim 3 (original): The method of claim 1, wherein the step of applying a stream of the mixture to the support surface occurs without use of a plenum system.

Claim 4 (original): The method of claim 1, wherein the step of applying a stream of the mixture includes spraying the mixture against the support surface.

Claim 5 (currently amended): A method of making a preform, comprising:
providing reinforcing material comprising chopped fibers;
providing binder material;
mixing the reinforcing material and the binder material, wherein the step of mixing the reinforcing material and the binder includes emitting a stream of reinforcing material and emitting a stream of binder and mixing the streams;
applying a stream of the mixture to a solid support surface thereby adhering the mixture to the solid support surface; and
shaping and solidifying the mixture to form the preform,
wherein in the step of applying, a vacuum is not applied to said solid support surface.

Claim 6 (previously presented): The method of claim 5, wherein the chopped fibers comprise chopped fiberglass.

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Claim 7 (original): The method of claim 1, wherein the step of providing the reinforcing material includes emitting a stream of chopped fibers.

Claim 8 (previously presented): The method of claim 1, wherein the step of providing binder includes emitting a stream of binder particulate.

Claim 9 (original): The method of claim 1, wherein the step of providing binder includes conditioning the binder before mixing the binder with the reinforcing material.

Claim 10 (original): The method of claim 9, wherein conditioning the binder includes heating the binder.

Claim 11 (canceled).

Claim 12 (previously presented): The method of claim 1, wherein emitting the streams of reinforcing material and binder includes emitting a plurality of streams wherein the streams are layered together.

Claim 13 (previously presented): The method of claim 1, further comprising conditioning the binder prior to emitting the stream of binder.

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Claim 14 (original): The method of claim 13, wherein conditioning includes heating the binder.

Claim 15 (previously presented): The method of claim 1, wherein mixing the reinforcing material and the binder includes applying heat.

Claim 16 (currently amended): A method of making a preform, comprising:
providing reinforcing material comprising chopped fibers;
providing binder material;
combining the reinforcing material and the binder material so that the binder material adheres to the reinforcing material, wherein the step of combining the reinforcing material and the binder includes combining a stream of reinforcing material and a stream of binder, wherein the reinforcing material and the binder are combined;
applying heat to a stream of reinforcing material and binder;
applying the heated stream to a solid support surface thereby adhering the combination of reinforcing material and binder to the solid support surface, wherein in the step of applying, a vacuum is not applied to said solid support surface; and
shaping and solidifying the mixture to form the preform.

Claim 17 (original): The method of claim 15, wherein the reinforcing material and the binder are combined while the heat is applied.

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Claim 18 (previously presented): The method of claim 15 or 16, wherein applying heat includes forming a controlled heat zone and feeding the reinforcing material and binder through the heat zone.

Claim 19 (currently amended): The method of claim ~~15 or 16~~ 18, wherein a flame is used in creating said heat zone.

Claim 20 (original): The method of claim 1, wherein the step of applying the mixture to a support surface includes applying the mixture to a vertical support surface.

Claim 21 (canceled).

Claim 22 (original): The method of claim 1, wherein the step of applying the mixture to a support surface includes applying the mixture to a surface having ambient air conditions.

Claim 23 (original): The method of claim 1, wherein the step of applying the mixture to a support surface includes applying the mixture to a surface having apertures therein.

Claim 24 (canceled).

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Claim 25 (original): The method of claim 1, wherein the step of solidifying the mixture includes cooling the mixture so that it conforms to the shape of the support surface.

Claim 26 (original): The method of claim 1, further comprising applying a moldable material to the preform to form a composite and curing the composite to form a part.

Claim 27 (original): The method of claim 26, further comprising applying a vacuum to the composite before the part is cured.

Claim 28 (currently amended): A method of making a molded part using a preform, comprising:

providing reinforcing material comprising chopped fibers;

providing binder material;

contacting the reinforcing material and the binder material, wherein stream of reinforcing material and a stream of binder are contacted with one another;

applying the contacted streams of reinforcing material and binder on a solid support surface so as to adhere them in place;

solidifying the applied materials to form the preform; and

applying at least one of heat and pressure to the preform to form and shape a molded part.

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Claim 29 (original): The method of claim 28, further comprising adding resin to the preform prior to applying at least one of heat and pressure to the preform.

Claim 30 (canceled)

Claim 31 (currently amended): A method of making a preform for use in forming a structural part, comprising:

providing a stream of fibrous reinforcing material;

adhering particulate binder material to the reinforcing material by providing a stream of heated binder material to the stream of fibrous reinforcing material to form an adhesive mixture; and

spraying the adhesive mixture of the reinforcing material and the binder material against a solid support surface such that the mixture adheres to the solid support surface and is shaped and solidifies into the preform, wherein a vacuum is not applied to said solid support surface during said spraying.

Claim 32 (original): The method of claim 31, wherein spraying occurs without forced air adjacent to the support surface.

Claim 33 (original): The method of claim 31, wherein spraying occurs in the absence of a plenum system.

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Claim 34 (original): The method of claim 31, wherein adhering binder material to the reinforcing material includes conditioning the binder material with heat and forcing the conditioned binder material into the stream of reinforcing material.

Claim 35 (original): The method of claim 31, wherein adhering binder material to the reinforcing material includes creating a heat zone and feeding the reinforcing material and the binder into the heat zone.

Claim 36 (original): The method of claim 31, wherein adhering binder material to the reinforcing material includes layering streams of reinforcing material with streams of binder material in the presence of a flame.

Claim 37 (original): The method of claim 31, wherein providing a stream of fibrous material includes blowing chopped fiberglass.

Claim 38 (original): The method of claim 31, wherein spraying the adhesive mixture includes spraying the mixture onto a vertical support surface.

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Claim 39 (original): The method of claim 31, wherein spraying the adhesive mixture includes spraying the mixture onto a solid surface.

Claim 40 (previously presented): A method of making a preform adapted for use in forming a structural part, comprising:

providing a stream of fibrous reinforcing material;

adhering particulate binder material to the reinforcing material by providing a stream of heated binder material and the stream of fibrous reinforcing material to form an adhesive mixture wherein the reinforcing material and the binder material are introduced into a heat zone in forming the adhesive mixture ; and

spraying the adhesive mixture of the reinforcing material and the binder material against a perforated support surface such that the mixture adheres to the perforated support surface, wherein a vacuum is not applied to said perforated support surface during said spraying, and is shaped and solidifies into the preform, said preform incorporating said perforated support surface.

Claim 41 (original): The method of claim 31, wherein spraying the adhesive mixture includes spraying the mixture onto the support surface under ambient air conditions.

Claim 42 canceled

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Claim 43 canceled

Claim 44 (previously presented): The method of claim 5, further comprising applying a moldable material to the preform to form a composite and curing the composite to form a part.

Claim 45 (previously presented): The method of claim 16, wherein emitting the streams of reinforcing material and binder includes emitting a plurality of streams wherein the streams are layered together.

Claim 46 (previously presented): The method of claim 28, wherein in the step of applying, a vacuum is not applied to said solid support surface.

Claim 47 (previously presented): A method of making a preform, comprising:
providing reinforcing material comprising chopped fibers;
providing binder material;
mixing the reinforcing material and the binder material so that the binder material adheres to the reinforcing materials, wherein the step of mixing the reinforcing material and the binder includes contacting a stream of reinforcing material and a stream of binder and combining the streams;

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applying the mixture to a solid support surface thereby adhering the mixture to the solid support surface, wherein in the step of applying, a vacuum is not applied to said solid support surface;

shaping the mixture after application to the support surface and prior to solidifying;
and

solidifying the mixture to form the preform, said preform including said solid support surface.